WHAT IS CLAIMED IS:

1. A method of quantifying the sharpness of a digital image, comprising the steps of:

identifying a plurality of edges in a digital image; and,

calculating an image sharpness metric value representative of the sharpness of the digital image based on the identified edges.

2. A method according to claim 1, in which the step of calculating an image sharpness metric value further comprises the step of determining an aggregate edge profile representative of said image, from said identified edges; and,

calculating the image sharpness metric value based on the aggregate edge profile.

3. A method according to claim 1, in which the step of calculating an image sharpness metric value representative of the sharpness of the digital image further comprises the step of calculating a sharpness metric value for each of the identified edges and calculating the image sharpness metric value based on the calculated sharpness metric values for each of the identified edges

4. A method according to claim 1, in which the step of identifying a plurality of edges is performed using an edge detection operator on the digital image.

5. A method according to claim 4, in which the step of identifying a plurality of edges is performed using an edge detection operator on a low-resolution version of the digital image.

6. A method according to claim 4, in which the edge detection operator is selected from the group consisting of a Sobel edge detector, a Canny edge detector and a Prewitt edge detector.

7. A method according to claim 4, in which prior to the operation of the edge detection operator, the image is split up into a number of blocks, and a threshold value for an edge is set for each block.

8. A method according to claim 7, in which the threshold value for each block is equal to the RMS value within the respective block.

9. A method according to claim 5, in which the positions of the identified edges detected in the low-resolution image are interpolated to identify corresponding edges in a full-resolution version of the image.

10. A method according to claim 9, further comprising the steps of:

extracting edge profiles corresponding to the edges in the full-resolution version of the image;

testing said extracted edge profiles for compliance with one or more criteria; and,

rejecting each one of said tested edge profiles that does not satisfy said one or more criteria.

11. A method according to claim 10, in which the one or more criteria include whether or not the profile neighborhood is within defined numeric limits, whether or not the profile includes any large negative slopes and whether or not the profile is within a predetermined range on at least one side of the edge.

12. A method according to claim 10, comprising the step of storing the extracted edge profiles that satisfy the one or more criteria and in which an aggregate edge profile for the image is determined in dependence on said stored edge profiles.

13. A method according to claim 2, in which a method by which the aggregate edge profile is determined in dependence on the stored edge

profiles is selected from the group consisting of taking the median of the stored edge profiles, taking a mean of the stored edge profiles and calculating a weighted sum of stored edge profiles.

14. A method according to claim 3, in which the image sharpness metric value is defined as an average of the sharpness metric values obtained from each of the identified edges.

15. A method according to claim 12, in which the sharpness metric value obtained from each of the extracted edge profiles is defined as follows:

$$\text{Sharpness metric value} = \frac{1}{N}\sum_{k=1}^{N}(x_{c-1+k} - x_{c-k})W_k$$

in which N is the number of gradient values to measure;

c is a co-ordinate representing the center of the edge profile;

k is the profile sample offset;

x_k is the profile sample value at a position defined by k; and,

where W_k is a weighting vector to weight contributions to the sharpness metric value in dependence on closeness of a gradient to the center of the edge profile.

16. A method according to claim 2, in which the image sharpness metric value is defined as follows:

$$\text{Sharpness metric value} = \frac{1}{N}\sum_{k=1}^{N}(x_{c-1+k} - x_{c-k})W_k$$

in which N is the number of gradients values to measure;

c is a co-ordinate representing the center of the aggregate edge profile;

k is the profile sample offset;

x_k is the profile sample value at a position defined by k; and,

W_k is a weighting vector which gives greater significance to the gradient measurements the closer they are made to the center of the aggregate edge profile.

17. A method according to claim 12, in which said extracted edge profiles are normalized prior to storing.

18. A method of controlling the sharpness of an image, comprising the steps of: quantifying the sharpness of the image in accordance with the method of claim 1, to provide an image sharpness metric value representative of the image sharpness;

adjusting the aggressiveness of a digital sharpening algorithm in dependence on a calibrated relationship between the aggressiveness of the digital sharpening algorithm and the image sharpness metric value.

19. A method according to claim 18, in which the calibrated relationship between the aggressiveness of a digital sharpening algorithm and the image sharpness metric value is generated by:

(a) filtering each image in a training set of images using the digital sharpening algorithm across a range of values for aggressiveness of the digital sharpening algorithm;

(b) for each value of aggressiveness for each of the images in the training set, quantifying the sharpness of the sharpened image in accordance with the method of claim 1;

(c) determining the relationship between the aggressiveness of the digital sharpening algorithm and the image sharpness metric value in dependence on results of step (b).

20. A method according to claim 18, in which the aggressiveness of the digital sharpening algorithm is defined by the gain of an unsharp-mask filter.

21. A processor adapted to receive as an input a digital image and provide as an output an image sharpness metric value representative of the sharpness of the image, the processor being adapted to execute the method steps of claim 1.

22. Computer program code means, which when run on a computer cause said computer to execute the method steps of claim 1.